CLAIMS

What is claimed is:

1. (currently amended) An apparatus for use in a borehole in an earth formation comprising:

(a) a conducting tubular, said conducting tubular having a damping portion for reducing a flow of eddy currents;

(b) at least one transmitter on said conducting tubular which propagates an electromagnetic field in the earth formation;

(c) at least one receiver on said conducting tubular which receives a ~~temporal~~ transient signal resulting from interaction of said electromagnetic field with said earth formation; and

(d) a processor ~~for determining~~ which determines from said ~~temporal~~ transient signal a resistivity of said earth formation.

2. (previously presented) The apparatus of claim 1, wherein said damping portion further comprises at least one cut in said damping portion of said conducting tubular.

3. (original) The apparatus of claim 2, wherein a non-conductive material is disposed within said cut.

4. (currently amended) The apparatus of claim 1, wherein said damping portion further ~~comprises~~ comprises:

(i) a first segment having a cut, and

(ii) a second segment with non-conductive material positioned on an outer face of said segment.

5. (original) The apparatus of claim 1, wherein said damping portion further comprises a segment of pipe with a non-conductive material positioned on an outer face of said segment.

6. (previously presented) The apparatus of claim 1 wherein said damping portion comprises a ferrite.

7. (previously presented) The apparatus of claim 1 wherein said damping portion comprises a material with low magnetostriction.

8. (currently amended) The apparatus of claim 1, wherein said at least one transmitter further comprises at least one coil oriented so as to induce a magnetic moment in one of (i) a longitudinal direction parallel to an axis of said tubular, and, (ii) a direction inclined to said longitudinal axis.

9. (previously presented) The apparatus of claim 1, wherein said at least one receiver further comprises at least one coil having an orientation selected from (i) parallel to an axis of said tubular, and, (ii) inclined to an axis of said tubular.

10. (previously presented) The apparatus of claim 2 wherein said cut comprises a longitudinal cut.

11. (previously presented The apparatus of claim 2 wherein said cut comprises a transverse cut.

12. (currently amended) The apparatus of claim 1 further comprising a device ~~for extending~~ which extends said borehole.

13. (original) The apparatus of claim 1 wherein said processor further determines a distance to a bed boundary in said earth formation.

14. (currently amended) A method of drilling an earth formation comprising:

(a) conveying a bottom hole assembly (BHA) into said earth formation, said BHA including a tubular having a damping portion for reducing a flow of eddy currents;

(b) using at least one transmitter on said tubular for producing an electromagnetic field in the earth formation;

(c) using at least one receiver on said tubular for receiving a ~~temporal~~ transient signal resulting from interaction of said ~~first signal~~ electromagnetic field with said earth formation; and

(d) determining from said ~~temporal~~ transient signal ~~said~~ a resistivity of said earth formation.

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15. (original) The method of claim 14, wherein said damping portion further comprises at least one cut.

16. (original) The method of claim 15, wherein a non-conductive material is disposed within said cut.

17. (currently amended) The method of claim 14, wherein said damping portion further ~~comprises~~ comprises:

(i) a first segment having a cut, and

(ii) a second segment with non-conductive material positioned on an outer face of said segment.

18. (original) The method of claim 14, wherein said damping portion further comprises a segment of pipe with a non-conductive material positioned on an outer face of said segment.

19. (original) The method of claim 18 further comprising using a ferrite for said non-conductive material.

20. (original) The method of claim 18 further comprising using a material with low magnetostriction for said non-conductive material.

21. (currently amended) The method of claim 14, wherein said at least one transmitter further comprises at least one coil oriented so as to induce a magnetic moment in one of (i) a longitudinal direction parallel to an axis of said tubular, and, (ii) a direction inclined to said longitudinal axis.

22. (previously presented) The method of claim 14, wherein said at least one receiver further comprises at least one coil having an orientation selected from (i) parallel to an axis of said tubular, and, (ii) inclined to an axis of said tubular.

23. (previously presented) The method of claim 15 wherein said cut comprises a longitudinal cut.

24. (previously presented) The method of claim 15 wherein said cut comprises a transverse cut.

25. (original) The method of claim 14 further comprising using a device on said BHA for extending said borehole.

26. (original) The method of claim 14 further comprising determining a distance to an interface in said earth formation.

27. (original) The method of claim 25 wherein (a) – (d) are carried out during continuing rotation of said BHA.

28. (original) The method of claim 26 further comprising using said determined distance for controlling a drilling depth of said BHA.

29. (original) The method of claim 26 wherein said interface comprises a bed boundary.

30. (original) The method of claim 26 wherein said interface comprises a fluid interface.

31. (previously presented) The apparatus of claim 1 wherein said at least one transmitter and said at least one receiver are positioned on said conducting tubular on opposite sides of said damping portion.

32. (previously presented) The method of claim 14 further comprising positioning said at least one transmitter and said at least one receiver on opposite sides of said damping portion.